

What is claimed is:

1. An optical device comprising opposing optical surfaces arranged to form a wedge, at least a portion of the opposing optical surfaces comprising a multilayer optical film that comprises alternating layers of at least two materials, and further wherein at least one of the materials has a stress induced birefringence.
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2. The optical device of claim 1, wherein the multilayer optical film comprises alternating first and second polymeric materials, wherein the absolute value of the difference in index of refraction between the first and second polymeric material is Δn_x along a first axis in the plane of the film and is Δn_z along a second axis orthogonal to the plane of the film, and wherein the ratio $\Delta n_z/\Delta n_x$ is less than 0.5.
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3. The optical device of claim 1, wherein the multilayer optical film comprises alternating first and second polymeric materials, wherein the absolute value of the difference in index of refraction between the first and second polymeric material is Δn_x along an in-plane direction of the film and is Δn_z along a thickness direction of the film, and wherein Δn_x is at least 0.05 and Δn_z is less than Δn_x .
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4. The optical device of claim 1, wherein the multilayer optical film comprises alternating first and second polymeric materials, wherein the first polymeric material is birefringent and the second polymeric material is isotropic.
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5. The optical device of either of claims 1 or 2, wherein the multilayer optical film is a mirror.
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6. The optical device of either of claims 1 or 2, wherein the optical device is hollow.
7. The optical device of either of claims 1 or 2, wherein the opposing optical surfaces form a cone.

8. The optical device of either of claims 1 or 2, wherein the opposing optical surfaces form a parabola.
- 5 9. The optical device of either of claims 1 or 2, wherein the opposing optical surfaces are portions of a continuous surface.
- 10 10. The optical device of either of claims 1 or 2, wherein the optical device is suitable for receiving solar illumination.
- 10 11. An optical device comprising opposing optical surfaces arranged to form a light pipe, at least a portion of the opposing optical surfaces comprising a multilayer optical film that comprises alternating layers of at least two materials, and further wherein at least one of the materials has a stress induced birefringence.
- 15 12. The optical device of claim 11, wherein the multilayer optical film comprises alternating first and second polymeric materials, wherein the absolute value of the difference in index of refraction between the first and second polymeric material is Δn_x along a first axis in the plane of the film and is Δn_z along a second axis orthogonal to the plane of the film, and wherein the ratio $\Delta n_z/\Delta n_x$ is less than 0.5.
- 20 13. The optical device of claim 11, wherein the multilayer optical film comprises alternating first and second polymeric materials, wherein the absolute value of the difference in index of refraction between the first and second polymeric material is Δn_x along an in-plane direction of the film and is Δn_z along a thickness direction of the film, and wherein Δn_x is at least 0.05 and Δn_z is less than Δn_x .

14. The optical device of claim 11, wherein the multilayer optical film comprises alternating first and second polymeric materials, wherein the first polymeric material is birefringent and the second polymeric material is isotropic.

5 15. The optical device of either of claims 11 or 12, wherein the multilayer optical film is a mirror.

16. The optical device of either of claims 11 or 12, wherein the optical device is hollow.

10 17. The optical device of either of claims 11 or 12, wherein the opposing optical surfaces are portions of a continuous surface.

18. The optical device of either of claims 11 or 12, wherein the optical device has a circular cross-sectional shape.

15 19. The optical device of either of claims 11 or 12, wherein the optical device has a cross-sectional shape selected from the group consisting of ellipses and closed irregular curves.

20 20. The optical device of either of claims 11 or 12, wherein the optical device has a cross-sectional shape selected from the group consisting of triangles, squares, rectangles, and other polygonal shapes.